

In response to the Office Action of January 16, 2002, please amend the application as follows:

IN THE CLAIMS

Please cancel claims 1-6, 8 and 57-59 without prejudice or disclaimer.

Please add new claims 62-81, inclusive, as follows:

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-- 62. A pharmaceutical composition comprising as active principle biologically active isolated Tat protein, fragments thereof and/or mutants in combination with suitable excipients and/or diluents, wherein said Tat, fragments and/or mutants, are capable of: 1) entering activated endothelial cells or dendritic cells at concentrations up to 10 nM and 2) performing at least one action selected from the group consisting of the following actions: i) activating the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial cells, ii) activating virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with a HIV-1 promoter-reporter plasmid; and iii) inducing in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

63. The pharmaceutical composition according to claim 62, wherein Tat, in its purified, non-aggregated and non-oxidized form, is lyophilized for storage and re-suspended in a biologically acceptable fluid for use.

64. The pharmaceutical composition according to claim 62, wherein said composition is a vaccine for use in the prophylactic and/or therapeutic treatment of AIDS, tumors, syndromes and symptoms associated with HIV infection.

65. The pharmaceutical composition according to claim 62, wherein Tat has the sequence identified as SEQ. ID. NO 2.

66. The pharmaceutical composition according to claim 62 in a form suitable for administration selected from the group consisting of mucosal, nasal, oral, vaginal, rectal, intramuscular, subcutaneous, intradermal systemic and local administration.

67. The pharmaceutical composition comprising as active principle biologically active isolated Tat protein, fragments thereof and/or mutants in combination with suitable excipients and/or diluents, wherein said Tat is obtained by a process comprising a purification step performed under conditions to prevent its oxidation and aggregation.

68. The pharmaceutical composition according to claim 67, wherein said purification step is performed by heparin affinity chromatography.

69. The pharmaceutical composition according to claim 68, wherein said purification step is followed by storage of the Tat protein in lyophilized form and its resuspension in a degassed buffer.

70. The pharmaceutical composition according to claim 67, wherein said composition is a vaccine for use in the prophylactic and/or therapeutic treatment of AIDS, tumors, syndromes and symptoms associated with HIV infection.

71. The pharmaceutical composition according to claim 67, wherein Tat has the sequence identified as SEQ. ID. NO 2.

72. The pharmaceutical composition according to claim 67, in a form suitable for administration selected from the group consisting of mucosal, nasal, oral, vaginal, rectal, intramuscular, subcutaneous, intradermal systemic and local administration.

73. A therapeutic method for treating AIDS, tumors and syndromes and symptoms associated with HIV infection comprising administering to a subject in need thereof, a monomeric biologically active isolated Tat protein, fragments thereof and/or mutants, wherein said Tat, fragments and/or mutants, are capable of: 1) entering activated endothelial cells or dendritic cells at concentrations up to 10 nM; and 2) of performing at least one action selected from the group consisting of the following actions: (i) activating the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial cells; (ii) activating virus replication when added to infected cells as measured a) by the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein; and/or b) by the transactivation of HIV-1 gene expression in cells transfected with a HIV-1 promoter-reporter plasmid; and (iii) inducing in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

74. The therapeutic method for treating AIDS, tumors and syndromes and symptoms associated with HIV infection comprising administering to a subject in need thereof a composition according to claim 62.

75. The therapeutic method for treating AIDS, tumors and syndromes and symptoms associated with HIV infection comprising administering to a subject in need thereof a composition according to claim 67.

76. Biologically active isolated Tat protein, fragments thereof and/or mutants, wherein said Tat, fragments and/or mutants, are capable of: 1) entering activated endothelial cells or dendritic cells at concentrations up to 10 nM and 2) performing at least one action selected from the group consisting of the following actions: i) activating the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial cells; ii) activating virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with HIV-1 promoter-reporter plasmid; and iii) inducing in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

77. The Tat protein according to claim 76, wherein Tat, in its purified, non-aggregated and non-oxidized form, is lyophilized for storage and re-suspended in a biologically acceptable fluid for use.

78. The Tat protein according to claim 76, wherein Tat, in its purified, non-aggregated and non-oxidized form, is lyophilized for storage and re-suspended in a biologically acceptable fluid for use as a vaccine.

79. The Tat protein according to claim 76, wherein Tat has the sequence identified as SEQ. ID. NO. 2.

80. The Tat protein, fragments thereof and/or mutants, as defined according to claim 76, for preventing or treating AIDS, tumors and syndromes and symptoms associated with HIV infection.